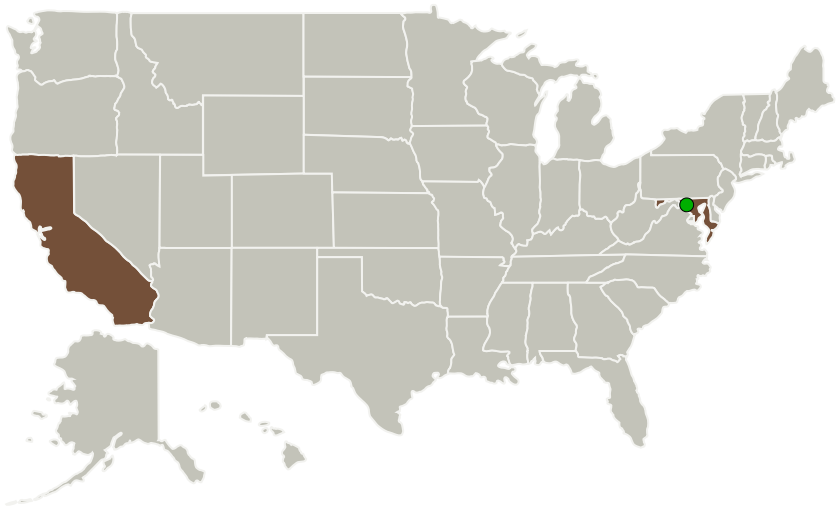
Fiberless Optical Gyroscope, Phase II

Completed Technology Project (2014 - 2017)

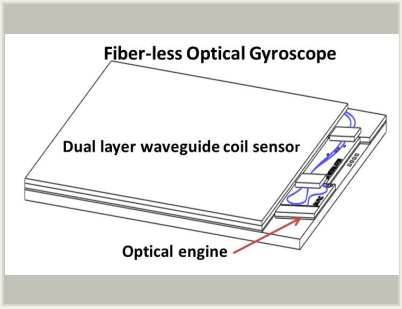
Project Introduction

We propose a radical new approach for to the design and fabrication of a fiber-less Interferometric Optical Gyroscope (IOG) that enables the production of a radiation hard, very small IMU with better performance, higher reliability, high level of robustness and lower cost. We estimate that an order-of-magnitude improvement in cost and size to performance ratio of IOG sensors and their corresponding assemblies can be achieved when compared to the conventional Fiber Optics Gyroscope (FOG) implementations, enabling high level of performance in a MEMs compatible IMU size. Such a system will be of great advantage for all future NASA applications that focus on small satellites and payloads

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Gener8, Inc.	Lead Organization	Industry	Sunnyvale, California
Goddard Space Flight Center(GSFC)	Supporting Organization	NASA Center	Greenbelt, Maryland



Fiberless Optical Gyroscope, Phase II

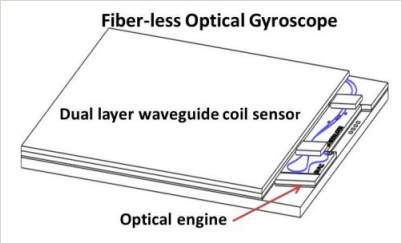
Table of Contents

Fiberless Optical Gyroscope, Phase II

Completed Technology Project (2014 - 2017)

Primary U.S. Work Locations	
California	Maryland

Images



Briefing Chart Image
Fiberless Optical Gyroscope, Phase II
(https://techport.nasa.gov/image/131279)

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
Gener8, Inc.

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
William Bischel

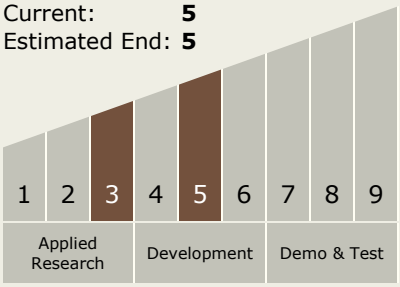
Co-Investigator:
William Bischel

Fiberless Optical Gyroscope, Phase II

Completed Technology Project (2014 - 2017)

Technology Maturity (TRL)

Start: **3**
Current: **5**
Estimated End: **5**



Technology Areas

Primary:

- TX02 Flight Computing and Avionics
  - TX02.1 Avionics Component Technologies
    - TX02.1.5 High Performance Field Programmable Gate Arrays

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System